Radiological Traceability Program

Description

The Department of Energy (DOE) initiated the Radiological Traceability Program (RTP) through an interagency agreement with the National Institute of Standards and Technology (NIST) and the DOE National Analytical Management Program (NAMP) in 1999 for the maintenance of traceability of radioanalytical performance testing (PT materials in accordance with the American National Standard "Measurement and Associated Instrument Quality Assurance for Radioassay Laboratories" (ANSI N42.23 - 1996). The Environmental Measurements Laboratory (EML) and the Radiological and Environmental Sciences Laboratory (RESL) were designated as the DOE EM reference laboratories for their respective performance evaluation programs, i.e., EML's Quality Assessment Program (QAP) and RESL's Mixed Analyte Performance Evaluation Program (MAPEP). The performance testing materials that they prepare will be acceptable to national laboratory accreditation authorities (such as National Environmental Laboratory Accreditation Conference) and are traceable to NIST

Status

NIST and the DOE reference laboratories, EML and RESL, have implemented the RTP to evaluate the radioanalytical measurement and sample preparatory capabilities applicable to PT materials generated by EML and RESL. The program involves the exchange and analysis of 48 test materials by NIST, EML and RESL over a four-year test cycle to cover the alpha, beta and gamma-emitting nuclide categories. Specific radiological analytes, concentrations, and sample matrices (water, soil, air filters, and vegetation) have been chosen to be consistent with the existing QAP of EML and MAPEP of RESL. In 1999, NIST and the reference laboratories completed traceability testing for water and traceability certificates have been issued to the reference laboratories by NIST. Soil and air filter PT samples were exchanged in CY2000 and 2001 between NIST and the reference laboratories, respectively. Traceability certificates have been issued for the majority of the analytes in the soil PT materials and results of air filter analyses are expected by the second calendar quarter 2002. Currently, DOE-EM provides funding to NIST for operational expenses and also funds a portion of one FTE contractor for expert technical oversight and evaluation.

Benefit to EM

DOE-EM sponsored performance evaluation programs have been operating for a number of years. Implementing and integrating the RTP into EM programs will assist the field offices in verifying the capabilities of its contract laboratories. Traceability to the national standard will provide an effective tool to gain regulatory acceptance of EM's data, particularly when human-health risks are a concern. In addition, a technically strong and well-managed performance evaluation program is critical to the process of accrediting laboratories that do business with EM. The RTP provides EM management with the confidence that they are making the correct decisions in critical site clean up activities. Furthermore, the RTP is a model for the utilization of existing DOE core capabilities coupled with the expertise of an outside federal agency to enhance the performance of DOE-EM.

The addition of traceability to a national standard has improved the technical strength of DOE performance evaluation

programs. Current DOE-HQ and Sample Management Office (SMO) uses of the

Radiological Traceability Program

performance evaluation programs are as follows:

- tier down NIST traceability and technical defensibility to SMO-contracted laboratories;
- monitoring of DOE laboratory complex relative to performance-based methods;
- quantitative and qualitative basis for determination of contract laboratory capability;
- pre-award (ICPT) and ongoing assessment (via the EM Consolidated Audit Program) of SMO contract laboratories;
- comparability of "between-DOE-site "radiological data as referenced to the national standard, and
- acceptability and comparability of analytical data by other regulatory and international organizations.

Contacts

Mary Verwolf
DOE, Radiological and Environmental Science Lab
850 Energy Drive, MS 4149
Idaho Falls, ID 83401
Phone: (208) 526-7001
Fax: (208) 526-2548
E-mail: verwolmc@id.doe.gov

Ray Bath
DOE, Environmental Measurements Lab
201Varick Street, 5th Floor
New York, NY 10014
Phone: (212) 620 3637
Fax: (212) 620-3611
E-mail: bath@eml.doe.gov

David McCurdy
491 Howard Street
Northboro, MA 01532
Phone: (508) 393-7280
FAX: (508) 393-7280
E-mail: demccurdy@aol.com